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(54) **ULTRASONIC GENERATION DEVICE**

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Related U.S. Application Data

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(57) **ABSTRACT**

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(58) **Field of Classification Search**
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An ultrasonic generation device including an ultrasonic generation element having a frame, a first piezoelectric vibrator, and a second piezoelectric vibrator and configured to emit ultrasonic waves in a buckling tuning-fork vibration mode in which the first piezoelectric vibrator and the second piezoelectric vibrator vibrate in mutually opposite phases at the same frequency. Further, a housing receives the ultrasonic generation element and has ultrasonic emission ports, a first acoustic path extending from a vicinity of a vibration surface of the first piezoelectric vibrator to a vicinity of the ultrasonic emission ports, and a second acoustic path extending from a vicinity of a vibration surface of the second piezoelectric vibrator to the vicinity of the ultrasonic emission ports.

20 Claims, 12 Drawing Sheets

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